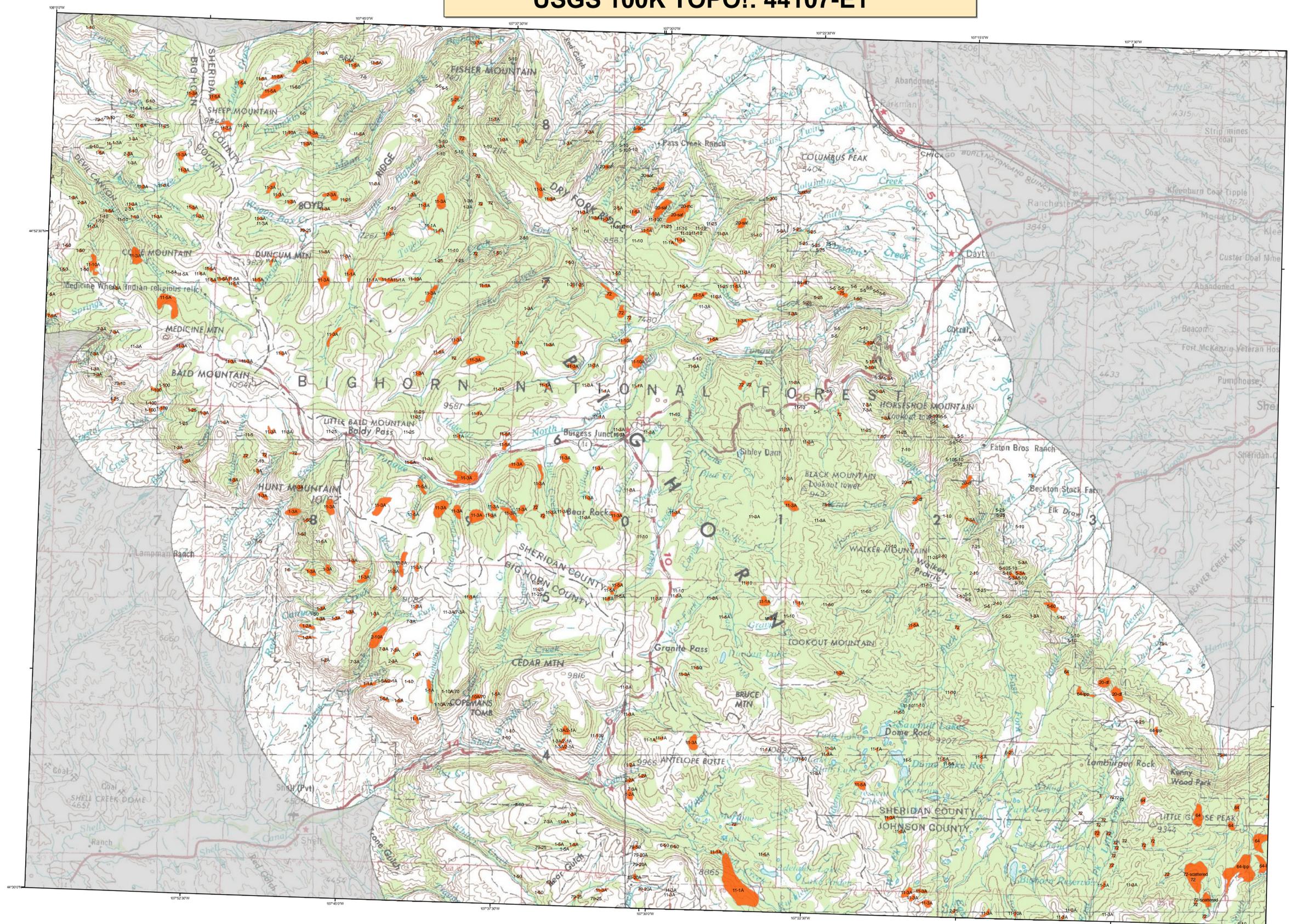


2008 Aerial Insect and Disease Survey Burgess Junction, Wyoming USGS 100K TOPO!: 44107-E1

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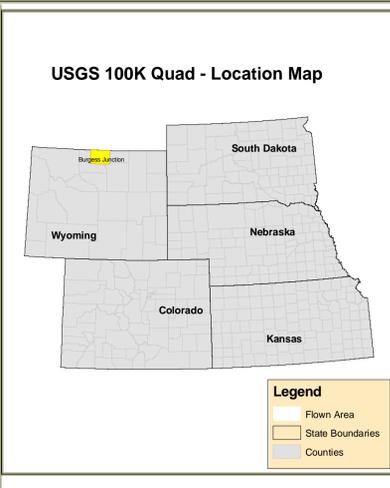


1:100,000

Legend

Use of the Number System
Example: 5-25 = The first number before the dash is the causal agent code. The number after the dash is the number of dead "fader" trees in the polygon or point. When recent dead trees are not counted, an intensity code of L-Light, M-Moderate, and H-High may be used after the causal agent code. Periodically, trees per acreage estimates are used after the causal agent code instead of number of dead "fader" trees (or an intensity code). For example: 5-10A = The first number before the dash is the causal agent code. The number after the dash is an estimation of the number of dead "fader" trees in the polygon per acre. In this case it would be an estimation that, on the average, one tree per every two acres would be a dead "fader" tree. In another example: 5-3A = that on the average, an estimated three trees per acre are dead "fader" trees. A "7" is used as a separator when a point polygon has more than one causal agent code.

Code	Causal Agent	Primary Host	Code	Causal Agent	Primary Host
1	Douglas-fir beetle	Douglas-fir	49	Aspen	Lodgepole Pine
2	Engelmann spruce beetle	Engelmann Spruce	50	White pine blister rust	Lodgepole Pine
3	Mountain pine beetle	Ponderosa Pine	51	Dwarf mistletoe	Softwoods
4	Mountain pine beetle	Lodgepole Pine	52	Elymus	Ponderosa Pine
5	Mountain pine beetle	Sheldahl Pine	53	Elm	All Tree Species
6	Western spruce sawfly	Ponderosa Pine	54	Air pollutants	All Tree Species
7	Western spruce sawfly	White Fir	55	Chemical damage	All Tree Species
8	Western spruce sawfly	White Fir	56	Lophodermium piceae	Softwoods
9	Western spruce sawfly	White Fir	57	Rhizodendron pseudotsugae	Softwoods
10	Douglas-fir engraver beetle	Douglas-fir	58	Lophodermium arcuta	Softwoods
11	Western balsam bark beetle	Subalpine Fir	59	Lecanostoma acicola	Softwoods
12	Unidentified bark beetle	Softwoods	60	Lophodermium opercular	Softwoods
13	Pine engraver	Lodgepole Pine	61	Dactyloctenium pini	Softwoods
14	Pine engraver	Lodgepole Pine	62	Beetle cast (Phytophagous)	All Tree Species
15	Ponderosa pine needle miner	Ponderosa Pine	63	Root Rot	All Tree Species
16	Lodgepole pine needle miner	Ponderosa Pine	64	Unidentified disease	Softwoods
17	Jack pine needle miner	Jack Pine	65	Winter damage light	All Tree Species
18	Spruce budworm, light defol.	Douglas-fir	66	Winter damage medium	All Tree Species
19	Spruce budworm, medium defol.	Douglas-fir	67	Winter damage heavy	All Tree Species
20	Spruce budworm, heavy defol.	Douglas-fir	68	Diploida	Softwoods
21	Douglas-fir bark beetle	Douglas-fir	69	Prion bark stain	Ponderosa Pine
22	Pine tortrix	Ponderosa Pine	70	Fire	All Tree Species
23	Tent caterpillars	Hardwoods	71	Fluorine	Softwoods
24	Leaf beetles	Hardwoods	72	Windthrow	All Tree Species
25	Pine needle-shaft miner	Ponderosa Pine	73	High water damage	All Tree Species
26	Pine needle-shaft miner	Ponderosa Pine	74	Avalanche	Common Pinyon
27	Pine sawflies	Ponderosa Pine	75	Aspen decline-multiple agents	Quaking Aspen
28	Pine sawflies	Ponderosa Pine	76	Prion mortality-unknown agents	Common Pinyon
29	Pine bark moth	Ponderosa Pine	77	Juniper	Juniper
30	Carabid beetles	Hardwoods	78	Gambel oak decline-unknown agents	Gambel Oak
31	Variable oak leaf caterpillar	Hardwoods	79	Limb pine decline-multiple agents	Limb Pine
32	Unidentified defoliator	All Tree Species	80	Hail damage	All Tree Species
33	Heterobasidion annosum (Formos annosus)	Softwoods	81	Unknown polygon	Unknown polygon
34	Armillaria calycata (Armillaria mellea)	Softwoods	82	Unidentified defoliator (elm)	Elm
35	Popovius schweinitzi	Softwoods	83	Unidentified defoliator (hardwood)	Hardwoods
36	Phomopsis	Softwoods	84	Flagging (hardwood)	Hardwoods
37	Cytospora	All Tree Species	85	Unidentified defoliator (cottonwood)	Cottonwood
38	Western gall rust	Unknown	86	Unidentified defoliator (hardwood)	Hardwoods
39	Comandra rust	Unknown	87	Mortality (pine)	Mortality (pine)
40	Stelactis rust	Lodgepole Pine	88	Mortality (pine)	Mortality (pine)



How Aerial Surveys Are Conducted

Data represented on this map are based on aerial observations manually recorded onto a map. This procedure is considered both an art form and a form of scientific data collection, and is highly subjective. An observer only has a few seconds to recognize the color difference between healthy and damaged trees of different species; diagnose causal agents correctly; estimate intensity; delineate the extent of damage; and precisely record this information on a georeferenced map. Air turbulence, cloud shadows, distance from aircraft, haze, smoke, and observer experience can all affect the quality of the survey. These data summaries provide an estimate of conditions on the ground and may differ from estimates derived by other methods.

Aerial surveys provide information on the current status for many causal agents, and are important when examining insect activity trends by comparing historical and current survey data over large areas.

Overview surveys are a 'snap shot' in time and therefore may not be timed to accurately capture the true extent or severity of a particular disturbance activity. Aerial surveys can be thought of as the first stage in a multi-stage sampling design. Other remote sensing approaches, including aerial photography, electro-optical sensors, and specially designed aerial surveys with modified flight patterns, can be used to more accurately delineate the extent and severity of a particular disturbance agent. The preceding methods are often more costly than overview surveys, and are generally reserved to address situations of sufficient environmental, economic, or political importance.

Area surveyed by Map Created:
Projection: UTM NAD83 Zone 13
Author: J. Ross, USDA Forest Service

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Cheyenne, Wyoming 82002

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Renewable Resources
Forest Health Management
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Lakewood, Colorado 80225

DISCLAIMER

Due to the nature of aerial surveys, the data on this map will only provide rough estimates of location, intensity and the resulting trend information for agents detectable from the air. Many of the most destructive diseases are not represented on this map because these agents are not detectable from aerial surveys. The data presented on this map should only be used as a partial indicator of insect and disease activity, and should be validated on the ground for actual location and causal agent. Shaded areas show locations where tree mortality or defoliation were apparent from the air. Intensity of damage is variable and not all trees in shaded areas are dead or defoliated.

The insect and disease data represented on this map are available digitally from the USDA Forest Service, Region Two Forest Health Management group. The cooperators reserve the right to correct, update, modify or replace GIS products. Using this map for purposes other than those for which it was intended may yield inaccurate or misleading results.

A data dictionary and digital copies of this map and the insect and disease data are available at: <http://www.fs.fed.us/r2/resources/fhm/aerialsurvey/>